

WHAT IS CLAIMED IS:

1. A vehicle-onboard electronic toll collection apparatus, comprising:

vehicle speed detecting means for detecting a speed of a motor vehicle which passes through a toll gate station equipped with an electronic toll collection system;

communication means for exchanging electronic toll collection information for settlement of toll charge/payment transaction with said toll gate station upon passing through said toll gate station;

measuring means for measuring reception field intensity of the received electronic toll collection information within a communication coverage area; and

decision means for making decision on the basis of said detected vehicle speed and said measured reception field intensity as to a location within said communication coverage area where electronic toll collection information communication can be started while sustaining favorable reception field intensity at said detected vehicle speed, to thereby allow said communication means to perform communication processing on the basis of result of said decision.

2. An vehicle-onboard electronic toll collection apparatus according to claim 1,

wherein said decision means is so designed as to sample distance data which ensure more favorable reception field intensity than the reception field intensity at an entrance location of said communication coverage area on the basis of speed at which said motor vehicle enters said communication coverage area, to thereby generate distance-versus-reception field intensity data.

3. An vehicle-onboard electronic toll collection apparatus according to claim 2,

wherein said decision means is so designed as to

determine said distance data which can ensure favorable reception field intensity through statistical processing on the basis of speed at which said motor vehicle enters said communication coverage area.

4. An vehicle-onboard electronic toll collection apparatus according to claim 2,

wherein said decision means is so designed as to convert the distance data to time data based on area entering speed.

5. An vehicle-onboard electronic toll collection apparatus according to claim 3,

wherein said decision means is so designed as to convert the distance data to time data based on area entering speed.

6. An vehicle-onboard electronic toll collection apparatus according to claim 1, further comprising:

image display means for displaying the electronic toll collection information exchanged through said communication means as an image while stopping display of the electronic toll collection information in dependence on a vehicle speed signal outputted from said vehicle speed detecting means.

7. An vehicle-onboard electronic toll collection apparatus according to claim 1, further comprising:

voice output means for generating a synthesized voice message signal for prompting change of speed of the motor vehicle in dependence on a vehicle speed signal outputted from said vehicle speed detecting means, for thereby outputting said message in voice.